	United States Environ	United States Environmental Protection Agency Washington, DC 20460				Work Assignment Number			
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## **Work Assignment Statement of Work**

Title: Evaluation of Implementation of Superfund's Green Remediation Strategy

Contractor: IEc, Inc. Contract No.: EP-W-10-002

**Work Assignment Number: 1-26** 

**Estimated Period of Performance:** Date of issuance to November 18, 2011

**Estimated Level of Effort:** 870 hours

**Key EPA Personnel:** 

Work Assignment COR (WA COR):

John Heffelfinger

Evaluation Support Division (1807T)

(202) 566-2192 (202) 566-2220

**Contract Level COR:** Cathy Turner

CMG/OP (1805T) 202/566-0951 202/566-3001 (fax)

#### **BACKGROUND AND PURPOSE:**

Located within the Office of Strategic Environmental Management is the Evaluation Support Division (ESD). ESD's mission is two-fold: First, ESD assesses and evaluates innovative activities in ways that identify and explain successful innovations or lessons learned and communicates its findings throughout the Agency to promote system change. Second, ESD builds the capacity of EPA staff and managers to conduct program evaluation activities throughout the Agency by providing technical support and training on program evaluation for EPA's national programs and regional offices. A crucial component in assessing the benefit of meeting goals, objectives, and sub-objectives is having measurable results.

As part of its effort to encourage the effective use of program evaluations throughout the Agency, ESD promotes program evaluation through a Program Evaluation Competition. This competition is part of an ongoing, long-term effort to help build the capacity of headquarters and regional offices to evaluate activities and to improve measures of program performance. This program evaluation project was chosen for support under the 2010 Program Evaluation Competition sponsored by OP.

The Superfund program cleans up hazardous waste sites pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. Cleaning up hazardous waste sites uses energy, water, and material resources, and creates an environmental footprint. In August 2009, Superfund released its draft Green Remediation (GR) Strategy, and released its final Strategy in September 2010. EPA defines GR as the practice of considering all environmental effects of remedy implementation and incorporating options to minimize the environmental footprint of cleanup activities. Green remediation encompasses five core elements: 1) material consumption and waste generation, 2) land and ecosystems impacts, 3) water requirements and impacts on water resources, 4) air emissions, and 5) energy requirements of the treatment system.

EPA's regional offices have initiated GR practices at some, but not all, federal-lead Superfund sites. In addition, the remedial program published a Green Remediation Primer<sup>a</sup> and several fact sheets highlighting best management practices. As EPA incorporates GR into site cleanups, it is important to evaluate its effectiveness in reducing the demands cleanup actions place on the environment. As each site's composition and remediation strategy are different, not all GR methods will be appropriate or applicable at every site. Limited information exists regarding the resource demands of a site within the five core elements of green remediation, with the most information existing regarding energy usage. As part of this evaluation, we anticipate that the contractor will identify where there are reasonable and reliable means to estimate these resource demands, and also where there are significant data gaps or deficiencies related to each of the five core elements.

Within EPA, the Superfund GR strategy and policy is led by the Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI). The primary purpose of this work assignment is to conduct a "formative evaluation" at the national, programmatic level that will help the OSRTI: 1) assess EPA's experiences to date in implementing the GR Strategy; 2) determine a baseline against which to measure EPA's progress in implementing the GR Strategy; and 3) determine the best metrics for measuring the program's success in implementing GR practices. A secondary purpose of the evaluation is to share applicable knowledge on cross-cutting issues with other programs throughout the Agency. Specifically, the findings from this formative evaluation of the GR Strategy can be used to inform other land cleanup and restoration programs (e.g., Brownfields, RCRA, Underground Storage Tanks) as they also work to evaluate the environmental footprints and reductions while performing cleanup activities.

The Superfund program envisions the GR Strategy becoming a standard business practice while remediating sites. In the future, the Superfund program intends to evaluate the impact of the GR Strategy. A key component of this formative evaluation will include the contractor's development of a comprehensive logic model that thoroughly reviews the Strategy's resources, activities, outputs and outcomes. A major purpose will be to allow the program to begin focusing its data collection efforts and track its accomplishments consistently, so that the impact of the Strategy can be evaluated in the future. The formative evaluation and logic model will also help to inform the Superfund program as it further hones its GR Strategy.

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<sup>&</sup>lt;sup>a</sup> Green Remediation: Incorporating Sustainable Environmental Practices into Remediation of Contaminated Sites, U.S. Environmental Protection Agency, April 2008, EPA 542-R-08-0021

#### **Quality Assurance (QA) Requirements**

Check [ ] Yes or [ X ] NO, if the following statement is true or false. The Contractor shall submit a written Quality Assurance Project Plan for any project that is developing environmental measurements or a Quality Assurance Supplement to the Quality Management Plan for any project which generates environmental data using models with their technical proposal.

#### TASKS AND DELIVERABLES:

The WA COR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the WA COR's comments.

Contractor personnel shall at all times identify themselves as Contractor employees and shall not present themselves as EPA employees. Furthermore, they shall not represent the views of the U.S. Government, EPA, or its employees. In addition, the Contractor shall not engage in inherently governmental activities, including but not limited to actual determination of EPA policy and preparation of documents on EPA letterhead.

#### TASK 1: PREPARE WORKPLAN

The contractor shall prepare a workplan within 15 calendar days of receipt of a work assignment signed by the Contracting Officer. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The WA COR and the Contract Level COR and the CO will review the workplan. However, only the CO can approve/disapprove the workplan. The contractor shall prepare a revised workplan incorporating the Contracting Officer's comments, if required.

### **Deliverables and Schedule Under Task 1**

1a. Work plan
 1b. Revised workplan
 Within 15 calendar days of receipt of work assignment.
 Within 5 calendar days of receipt of comments from the CO, if required.

# NOTE REGARDING WORK ASSIGNMENT DELIVERABLES AND TECHNICAL DIRECTION:

The Work Assignment Contracting Officer's Representative (COR) is authorized to issue technical direction under this work assignment. The WAM will follow-up all oral technical direction in writing within 5 days.

# TASK 2: DOCUMENT REVIEW AND DESIGN METHODOLOGY

[Contract Scope of Work Element III, Section 1, para(s) 1, page(s) (10 -11)]

- 2-1 PARTICIPATE IN CONFERENCE CALLS. The contractor shall participate in conference calls with the EPA COR and other Agency staff to clarify the purpose of the evaluation effort and to exchange ideas about the design of the assessment, the information to be collected, potential sources of information, appropriate ways to analyze and present the information, and other pertinent matters. The COR will contact the contractor and provide a time and date for the conference calls. For purposes of costing the contractor shall assume two, 2-hour conference calls.
  - 2-2 REVIEW DOCUMENTS. The EPA COR will provide the contractor with essential documents for review, including the CLU-IN (Cleanup Innovation) website (www.cluin.org/greenremediation) which provides a significant amount of information that the contractor **shall** review and synthesize. Other resources include the Superfund Green Remediation Strategy, GR strategies and policies put forth by the ten regions, the Green Remediation Primer, best management practices, and profiles of GR in the field. This review will provide a full picture of the ongoing activities that are currently being undertaken to implement the GR strategy as well as examples of accomplishments to date that might be replicated at other sites. The contractor is expected to seek out other documents for review, including those from government and non-government sources, to become familiar **with** all aspects of green remediation that are relevant to this evaluation effort.

The contractor shall complete a review of all documents seven (7) calendar days after receiving them, and maintain a list of key references from the document and literature review that it intends to use for the evaluation.

- DEVELOP A LOGIC MODEL. The development of a logic model is an essential tool in developing a common understanding of a program's inputs, activities, outputs, and outcomes. As an initial step in preparation for the evaluation, EPA began developing a rough, preliminary outline of a logic model for the Superfund GR Strategy. EPA will provide the outline to the contractor. Based on the conference calls (Task 2-1) and document review (Task 2-2), the contractor **shall** develop and submit an initial draft logic model of the GR Strategy and program, using software (e.g., Microsoft Word, Power Point) that can be manipulated/revised by EPA. Due to the nature of this formative evaluation, it is anticipated this will be an iterative process that will continue throughout the project. The contractor shall revise and eventually finalize the logic model within 7 calendar days after receipt of comments on draft(s) of logic models from the EPA COR. For purposes of costing, the contractor shall assume up to 15 hours of work of team correspondence regarding the logic model and 50 hours of development and revising the model.
- 2-4 REFINE EVALUATION QUESTIONS. EPA is providing below an initial list of draft evaluation questions for use by the contractor. Using this list, the information gathered in Tasks 2-1 and 2-2, and the logic model developed in Task 2-3, the contractor shall confer with the EPA COR and evaluation team members to discuss and refine the evaluation

questions. The contractor shall prepare and submit to the EPA COR a revised, comprehensive set of draft evaluation questions and sub-questions that will be the subject of this evaluation. The contractor **shall** finalize the draft questions 7 calendar days after receipt of comments from the EPA COR. For the purpose of costing, the contractor shall assume two, 2- hour conference calls.

The EPA evaluation team has identified the following key questions to provide focus to the formative program evaluation and to maximize its usefulness and effectiveness. These questions, while subject to further refinement, should form the basis of the evaluation going forward. Specific questions and sub-questions need to be developed by the contractor, in consultation with EPA, based on the outcomes of the logic modeling exercise and further discussions with EPA.

## Overarching Evaluation Questions:

- 1. Do we have clearly defined goals and objectives for the GR Strategy? Should they be refined and improved to enhance their usefulness (e.g, for management decision making; planning and budgeting; EPA's Strategic Plan)?
- 2. What performance measures are appropriate for measuring the effectiveness of the GR Strategy in achieving intended outcomes at a regional or national level?
- 3. What effect has the GR Strategy had on the practice of using green remediation techniques at Superfund sites?
- 4. Which initial activities or initiatives from the GR Strategy have been most effective in increasing awareness, adoption and/or implementation of GR strategies?
- 5. How do Remedial Project Managers (RPMs) factor the GR Strategy into their approach to planning site cleanup? What do RPMs know about the energy usage at the sites they manage?
- 6. What lessons have been learned as a result of implementing the GR strategy at sites?
- 7. What options can we identify for developing a baseline for the environmental footprint at sites with respect to the five core elements of the GR Strategy?
- 8. What are the best means for measuring the effectiveness of the GR Strategy in reducing the environmental footprint at sites that have implemented GR practices with respect to the five core elements of the GR Strategy?
- 9. Where are the primary data gaps and limitations that inhibit a better understanding of the results of implementing the GR Strategy?

#### Some Specific Evaluation Questions and Sub-Questions:

These draft questions may be revised based on the logic modeling that will be conducted with the contractor and further consultation with EPA.

- i. How do we get contract managers to implement the components of the GR Strategy?
- ii. What percentage of RPMs are implementing specific GR practices?
- iii. What percentage of RPMs know the amount of energy their sites are using?
- iv. What is the return on investment (ROI) for GR Strategy activities?

- 2-5 DESIGN EVALUATION METHODOLOGY. Based on the conference calls in Task 2-1, document review in Task 2-2, the final logic model (Task 2-3), and final evaluation questions in Task 2-4, the contractor shall prepare a draft evaluation methodology, which will address the purpose, audience, the refined questions that will be the focus of the evaluation, and information needed to conduct the formative evaluate of the program. This methodology shall include a plan for gathering the needed information described in Task 3, including a plan for developing interview/discussion guides and identifying potential interviewees, both domestic and international. The plan shall also include the methodology for compiling, analyzing and presenting the information gathered. The draft evaluation methodology shall also include a proposed schedule for each of the following: (1) all information gathering under Task 3-1, including interviews; (2) the compilation, analysis and presentation of information gathered (Task 3-2); and (3) providing the draft and final reports (Tasks 4-1 and 4-2). The draft evaluation methodology shall be due 30 calendar days after a receipt of a TD from the EPA COR. The final evaluation methodology **shall** be due 7 calendar days after receipt of comments from the EPA COR via TD. For the purpose of costing, the contractor shall assume two, 2-hour conference calls and one, half-day meeting in person with the EPA evaluation team (OP and OSRTI) in Washington, DC.
- 2-6 EVALUATION ASSURANCE PLAN. The contractor shall prepare an evaluation assurance plan (EAP) that shall describe the use of primary and or secondary data sources for the evaluation report. Specifically, the EAP will describe: 1) the purpose of the evaluation, 2) the methodology used to collect data for the report, 3) how and where data for the evaluation will be collected, 4) why the particular data collection method was chosen, 5) how the data will be used and by whom, 6) how the resulting evaluation report will be used and by whom and, 7) any data limitations or caveats. An example of an EAP will be provided by the WAM. The contractor shall submit the EAP to the EPA COR one week after the final evaluation methodology is approved. A final EAP will be delivered 3 calendar days after receipt of comments from the EPA COR via TD.

## Deliverables and Schedule Under Task 2

2-1	Participate in conference calls	To be specified by the EPA COR
2-2	Document review; key references list	To be specified by the EPA COR
2-3	Finalize Logic Model	7 calendar days after receipt of comments on draft Logic Model from EPA COR
2-4a	Draft Refined Questions	7 calendar days after conference call with EPA COR
2-4b	Final Refined Questions	7 calendar days after receipt of comments from EPA COR via TD
2-5a	Draft evaluation methodology	30 calendar days after receipt of TD from EPA COR
2-5b	Final evaluation methodology	7 calendar days after receipt of comments via TD from EPA COR

2-6a Draft Evaluation Assurance Plan
 2-6b Final Evaluation Assurance Plan
 3 calendar days after EPA COR approves final evaluation methodology
 3 calendar days after receipt of comments via TD from EPA COR

#### TASK 3: INFORMATION GATHERING AND ANALYSIS

[Contract Scope of Work Element III, Section 1, para(s) 1, page(s) (10 -11)]

3-1 INFORMATION GATHERING. The information that is needed to conduct this evaluation will come from a variety of sources. Within 7 calendar days after the EPA COR approves the evaluation methodology (via TD), the contractor shall begin the data collection process specified in the approved evaluation methodology. At this stage, EPA believes the contractor should focus on, but not be limited to, three primary sources of data for the evaluation:

#### Review of Existing Literature and Policies

The contractor shall continue and complete the literature review begun under Task 2-2 of internally and externally available information and documents regarding the Superfund GR Strategy and related green remediation topics, including a thorough review of the literature to obtain existing evaluations, studies, or analyses of GR programs or initiatives.

#### Interviews

In consultation with EPA, the contractor shall conduct interviews via telephone, e-mail, or in person with persons knowledgeable about the Superfund GR Strategy. In general, the contractor will prepare interview/discussion guides for the contractor's use in collecting information from persons identified in the evaluation methodology (Task 2-5). These interviews may include, but are not limited to:

Green Remediation Workgroup interviews- The GR strategy has been developed and refined through the efforts of a workgroup comprised of program staff at EPA HQ and in the regions. It is anticipated that the contractor will prepare a short questionnaire for RPMs to determine what knowledge level RPMs possess nationally regarding the GR strategy and its implementation, and about the energy use at the sites they manage. It is also anticipated that the contractor will facilitate a focus group discussion with the GR workgroup in order to establish what activities are being undertaken throughout the site cleanup process to implement the GR strategy and identify hurdles that regions have experienced and lessons learned from them.

## Regional Metrics Tracking Analysis

GR has been implemented in the field at specific sites, and case studies have been presented at national conferences. Several regions have begun developing different methods for tracking their GR efforts and the resource use reductions that have been accomplished. A review of the efforts by regions to track and report GR activities can provide valuable insight into effective means of establishing a baseline and tracking the reduction of environmental footprints at sites. The contractor's Work Plan should address the topic of efficiently obtaining relevant information from each of EPA's 10 Regional offices in carrying out this evaluation. For example, the Information

Management Coordinators in the regions, RPMs, and regional managers may be able to provide lessons learned and examples to follow, as metrics and how to track them are developed for the GR Strategy nationally.

EPA expects that the discussion guides used for interviews will be tailored to groupings of interviewees to address issues and information particular to each grouping. Further, the interviews should be informed by background research prior to conducting the interview. For purposes of costing, the contractor shall assume conducting 25-35 interviews of 1-hour duration. The contractor should also anticipate facilitating at least one in-person focus group discussion of the Green Remediation Workgroup, in either Washington, DC or another location to be specified by the COR. In addition, the contractor should plan to attend the National RPM Association meeting in May 2011 in Kansas City, KS, where site managers from all ten EPA regions will be present.

3-2 DISCUSSION OF DATA COMPILATION, ANALYSIS, AND PRESENTATION. In accordance with the evaluation methodology schedule, the contractor shall meet via conference call with the EPA COR and other Agency staff to present approaches to and preliminary results of compilation, analysis, and presentation of the information.

## **Deliverables and Schedule Under Task 3**

3-1a	Draft interview/discussion guides	In accordance with Methodology Schedule
		approved in Task 2-5b
3-1b	Finalize interview/discussion guides	In accordance with Methodology Schedule
		approved in Task 2-5b
3-1c	Document review; key references list	To be specified by the EPA COR
3-2	Discuss data compilation, analysis and	In accordance with Methodology Schedule
	presentation via conference call.	approved in Task 2-5b

#### TASK 4: REPORTS

[Contract Scope of Work Element III, Section 1, para(s) 1, page(s) (10 -11)]

- 4-1 DRAFT REPORTS. In accordance with the evaluation methodology schedule, the contractor shall submit draft reports containing the compilation, analysis, and presentation of all relevant information developed and gathered during the conduct of the evaluation. Specifically, the contractor shall include information obtained or developed in support of Tasks 2-1 through 3-2. For purposes of costing, the contractor shall assume that a sequence of a draft preliminary findings memorandum and two separate draft reports will be required.
- 4-2 FINAL REPORT. The contractor shall provide a final report that reflects appropriate consideration of the Agency's comments on the draft report and of any comments received during the oral presentations. The EPA COR will provide the contractor with a copy of the Evaluation Support Divisions' Report Style Guidelines. These guidelines shall be used to write all components of the evaluation report. In addition, the contractor shall use the ESD Report Cover provided by the EPA COR when preparing the final report.

- 4-3 EVALUATION RECOMMENDATION TAXONOMY FORM. The EPA will use this form to categorize each recommendation the contactor develops for the final report. If the final report contains recommendations, the contractor shall complete the Evaluation Recommendation Taxonomy Form by providing each recommendation for the given evaluation, its proposed evaluation recommendation category, its direct environmental impact, and any additional comments the contractor may have. The list of the evaluation recommendation categories is located on the form for reference purposes. The EPA COR will provide the contractor with a copy of the Evaluation Recommendation Taxonomy Form.
- 4-4 ORAL PRESENTATIONS. The contractor shall be prepared to make at least one oral presentation of the information at a date, time, and location to be specified by the EPA COR in a TD. The location will most likely be Washington, D.C. The contractor shall prepare appropriate briefing materials, specifically, a power point briefing for the oral presentation.
- 4-5 FACT SHEET. The contractor shall develop a fact sheet summarizing the evaluation purpose, questions, methodology, findings, and results. The EPA COR will provide the contractor with a copy of a fact sheet template.

## **Deliverables and Schedule Under Task 4**

4-1	Draft reports	In accordance with the evaluation methodology schedule approved by the EPA COR in task 2-5b.
4-2	Final report	14 calendar days after receipt of comments from EPA COR on the draft report and oral
4-3	Evaluation Recommendation Taxonomy	7 calendar days after the final report is completed.
4-4 4-5	Oral presentation Fact Sheet	To be scheduled by the EPA COR 7 calendar days after completion of Final Report

Table 1: Summary of Deliverables and Dates						
Task	Deliverable	Due Date				
Task 1 Prepare Work plan						
1a	Work plan	Within 15 calendar days of receipt of work assignment				
1b	Revised work plan	Within 5 calendar days of receipt of comments from CO				
Task 2 D	Task 2 Document Review and Design Methodology					
2-1	Participate in conference calls	To be specified by the EPA COR				
2-2	Document review and key references list	To be specified by the EPA COR				
2-3	Finalize Logic Model	7 calendar days after receipt of comments on draft Logic Model from EPA COR				
2-4a	Draft Refined Questions	7 calendar days after conference call with EPA COR				
2-4b	Final Refined Questions	7 calendar days after receipt of comments from EPA COR via TD				
2-5a	Draft Methodology	30 calendar days after receipt of TD from EPA COR				
2-5b	Final Methodology	7 calendar days after receipt of comments from EPA COR				
2-6a	Draft Evaluation Assurance Plan	7 calendar days after EPA COR approves final evaluation methodology				
2-6b	Final Evaluation Assurance Plan	3 days after receipt of comments from EPA COR via TD				
Task 3 In	nformation Gathering and Ana	<u></u>				
3-1a	Draft interview/discussion guides	In accordance with Methodology Schedule approved in Task 2-5b				
3-1b	Finalize interview/discussion guides	In accordance with Methodology Schedule approved in Task 2-5b				
3-1c	Document review; key references list	To be specified by the EPA COR				
3-2	Discussion of Data Compilation, Analysis and Presentation Plan	In accordance with Methodology Schedule approved in Task 2-5b				
Task 4 R	Task 4 Report					
4-1	Draft Reports	In accordance with Methodology Schedule approved in Task 2-5b				
4-2	Final Report	14 calendar days after receipt of comments on Draft Report from EPA COR and oral presentations				
4-3	Evaluation Recommendation Taxonomy Form	7 calendar days after completion of the Final Report				
4-4	Oral Presentations	To be scheduled by the EPA COR				
4-5	Fact Sheet	7 calendar days after completion of Final Report				

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